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Southwestern MEDICINE

OFFICIAL JOURNAL OF THE SOUTHWESTERN MEDICAL ASSOCIATION AND EL PASO COUNTY MEDICAL SOCIETY

March, 1950

CONTENTS

Dr. Brindley's Talk Before El Paso County Medical Society ..... Page 73

Are You Ashamed? (An Editorial) ..... Page 75

A. M. A. Dues (An Explanation) ..... Page 75
By Robert B. Homan, Jr., M. D., El Paso

THE PRESENT STATUS OF ANTIBIOTICS (An Important Discussion for The General Practitioner) ..... Page 77
By William A. H. Rettberg, M. D., Denver

The Red Cross National Blood Program ..... Page 82

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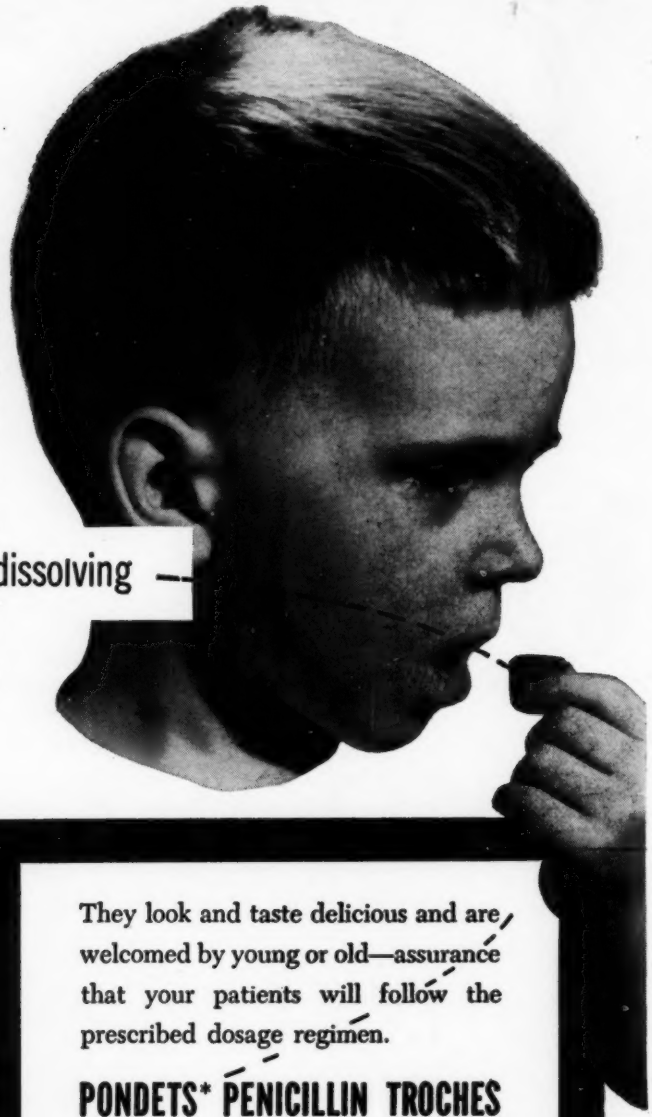

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WHEN WRITING ADVERTISERS PLEASE MENTION SOUTHWESTERN MEDICINE

EXCERPTS FROM THE RECENT TALK OF DR. GEORGE V. BRINDLEY, PRESIDENT OF THE TEXAS STATE MEDICAL ASSOCIATION, BEFORE EL PASO COUNTY MEDICAL SOCIETY

A large and enthusiastic audience of physicians and auxiliary members were afforded the unique opportunity of hearing Dr. Brindley, discuss the problems confronting the medical profession. Dr. Brindley literally is the pulse of the medical profession in Texas. His ability as a surgeon and his great acquaintance with Texas medicine over a period of many years renders him particularly qualified to discuss intimately these problems, both on a state and national debt.

Dr. Brindley has the rare facility of being able to bring to his audience the personal touch of the physician, and by this presented a notable discussion of many controversial points.

RELATION OF THE PHYSICIAN TO THE STATE MEDICAL SOCIETY

Now the first objective was this; that we should strengthen and increase the membership and organization of our County Medical Societies, and see to it that they are all properly chartered. There are at this time about six thousand members of our State Association; there are nearly nine thousand doctors in Texas, 8531 to be exact. That means this; that about one third of the doctors in Texas are not members of organized medicine. The only way that a doctor can be a part of organized medicine is through a County Medical Society, and that is the only way you can be a part of your State Medical Association; that is the only way you can be a part of the A.M.A. So I do say that it is the duty of all our County Medical Societies to do what we can to bring all of the bona fide physicians in that county, or in the jurisdiction of that county, into the membership of your county medical society. According to the ethics of the American Medical Association a doctor should become affiliated with a county medical society in order that he may promote the objectives of that medical society; that he may become better qualified; and that he may better serve the people of the community.

HEALTH SERVICE FOR RURAL COMMUNITIES

Another objective; the Association should provide better health service for the rural communities. This certainly is a major problem; it is one of the foremost important problems confronting the Association at this time. In addressing the graduating class at Galveston this part June, I made the remark that I hoped that a number of the graduating class would become specialists of general practice. It is estimated that probably about 80% of the health needs of the people can be met adequately by the general practitioner, so we should do what we can to encourage more young men to become general practitioners of medicine. In Kansas they have done more than in any other one state to meet this need. They have done this: they have encouraged those communities that need doctors to build small clinics, or small offices. In Kansas they have told all communities where doctors are needed that they should interest the community in building a small clinic or a small office for a doctor, and then if a doctor comes in that community, make him part of the community, and take him into their community life.

Down in Austin this past week-end, there was an executive council of the State Federal Association; and this resolution was submitted before the Delegates from Texas to the American Medical Association, and this was the resolution that'll come up in the American Medical Association again; "that every practitioner of Medicine would have to serve one year in a town of 5000 inhabitants or under before he could be eligible for any speciality board". This was wholeheartedly approved by the delegates of the American Medical Association.

ADEQUATE MEDICAL SERVICE TO THE INDIGENTS OF THE STATE

Another objective; the Association to formulate a concrete, practical, workable plan that will bring adequate medical service to the indigent of the State. That is quite important. Maryland has done more from that standpoint than any other state. They have a state tax to take care of the indigent. They find that only about five per cent of the people are badly in need, as indigents, for indigent care. It might be interesting to note that about five per cent of the families have incomes in Texas under five hundred dollars; about eleven per cent have incomes under one thousand dollars; about twenty-seven per cent have incomes under two thousand dollars. Doctors should take this into consideration in rendering medical treatment. Also doctors have an obligation to meet the health needs of the people of the state. For this reason, in talking to Dean Calvin, he tells me that the State of Texas spent from ten to eighteen thousand dollars. That's the point. Now get this; they spent from ten to eighteen thousand dollars to educate a doctor. So if the people of the state have spent eighteen thousand dollars to educate you, you certainly have an obligation to work for your state in bringing to the people of the state adequate health care.

GRIEVANCE COMMITTEE

There is going to be organized, or be brought up at the House of Delegates, at the next state meeting in Fort Worth the establishment of a Grievance Committee in Texas. Now that was first formed in Colorado. Colorado was the first state to form a Grievance Committee. That is a committee wherein any patient may make a complaint in regards to health care of her physician, or in regards to fee, or in regards to emergency calls, and the Committee has one doctor from every district. If there is one complaint from a certain district, the Councillor from that district could have no say in regards to the grievance or complaint of that one district. It would be given to the people, and they would be told that they have a place where they can go and file complaints, and have a sympathetic hearing. That is going to come up at our next House of Delegates, and six states already have it; the American Medical Association has advocated the formation of Grievance Committees in other states.

HEALTH SERVICE TO THE NEGROES OF THE STATE OF TEXAS

A committee was formed this year, consisting of two past-presidents, two members of the Board of Trustees, two Professors of Medicine, and a man who was reared with the problems of the Negroes to study the health care and to make recommendations to the State Medical Association at its next annual meeting as to what our relationship to the Colored People should be. That will come up at our next House of Delegates meeting. It might be interesting also to

tell you this. That at this time there is a Negro studying medicine at Galveston. We have one Negro medical school in the State. That's very new. They are affiliated with the Jefferson Davis Hospital.

RECOGNITION OF THE PRACTICAL NURSE

Another objective that's worthy of mention is this. To secure through proper legislation, proper recognition of the practical nurse, and regulations for education and training. There are several reasons for that. We have at this time about 280,000 registered accredited nurses in the United States that are active. We have 17,000 registered nurses in Texas. Now in the United States we have about 119,000 practical nurses; we have 4,675 in Texas. That means this; that approximately one-third of your nursing personnel are practical nurses. There are 51 schools in America for the training of practical nurses. We do not at this time have any laws regulating and giving recognition to the practical nurse in Texas. We do believe that there are nursing services than can be well performed by the practical nurse, and thus should bring to the people a more economical health service. So we should do what we can to make health care more economical, and we do believe that the practical nurse should be regulated and licensed in Texas.

SOCIALIZED MEDICINE

Take England; take New Zealand. Following the socialization of medicine, there has been the socialization of other industries; that is banks, transportation, of railroads, of steel; and Mr. Bevan, who is Administrator of Health in England, made this statement; that he would not be satisfied until capitalism was completely destroyed in England. So we should be concerned not so much about the socialization of medicine; if that was all, it would probably not be so bad; but it's where it leads. Always following the socialization of medicine, there has been a socialization of other industries.

I think another important question to ask is this. What is the economic status of those countries where we have socialization? We know that the economic status of all of the people of Europe and of England is poor. What does socialism do? It destroys initiative, self-respect, thrift, courage, hope, freedom. It debases the moral life of our people. It brings about waste, want, lower standards of living, poverty, and despair. I had the privilege about a year ago of hearing Dr. Jones of New Zealand describe how socialism functioned in New Zealand. It is gratifying to know that just a few weeks ago New Zealand repudiated socialism. Dr. Jones made this statement. "That socialism does four things: it increases indolence; it disapproves of the doctrine of individualism, of self-respect; it strikes at the very moral fibre of our young people; and it destroys character". He concluded his address by making this statement. "I hope that all of you will come up to me and tell me that you have enjoyed my address, because I hope it will cause you much concern because just eleven years ago my country was just like your country is today. We didn't think it could happen in New Zealand, but it did, and you people are much nearer to socialization than you think you are, and it makes me very unhappy to think that my children must grow up in New Zealand under the influence of socialism".

ANOTHER QUESTION

Another question I think we might briefly ask is this. What is the religious status of those people where we have socialism? We read frequently in our papers about religious persecutions in Communistic and Socialistic countries in Europe.

In May there was an article in the Saturday Evening Post saying that in Russia the young people were taught that there was no God.

Realizing all these facts I come to ask you why we should not do all that we can, and why we should not resolve that we will become interested in the problems of organized medicine to the end that we may not only preserve peace for American Medicine, but that we may have a part in preserving freedom for the people of this nation.

CONCLUSION

In conclusion let me read you a little comment, and then I'm through. Edna St. Vincent Millay says that "a nation is a tremendous river of people, pushing and forcing its way through time. It can wind down through cruel circumstance only to be dispersed in mud and swamps if the current of this life slows down." That has happened to both Germany and Britain. In conclusion, I would say, let us not be dispersed in the mud and swamps of socialism, but rather let us be a great people content to live on the plains and mountains of free enterprise, being free to think, to write and to speak our thoughts, to choose our avocation, to live in the place of our choosing, to be free to consult the lawyer, the dentist, or the doctor of our choice, to have a part in our local and national government, and a voting citizen, to have the right to dream dreams, and to work to make those dreams come true, and above all to be free to worship God according to the dictates of our own conscience.

If doctors believe, as do the majority of the American people, in private enterprise; and that private enterprise tends to develop the best in the individual, certainly when we come to depend upon the government, we lose our independence. That is our freedom, and when we lose freedom, we lose the joy of living. I would urge that all of us become tremendously concerned about these problems, and do what we can to preserve that freedom which our forefathers fought and won for this nation. I thank you for your attention.

THE MEDICAL AUXILIARY

The El Paso Auxiliary was honored by the presence of Mrs. Joseph B. Foster, president of the Auxiliary to the Texas State Medical Association of Texas, at their meeting in El Paso, January 9. Mrs. Foster spoke as she expressed it, "off the cuff", and said in part:

"I am sure it will be gratifying to you to know that in Texas both the Legislature and Senate have strong resolutions against any form of socialized medicine. Others passing resolutions against it at their national conventions have been The Daughters of the American Revolution, the National Federation of Women's Clubs, the American Legion Auxiliary, and many others. These resolutions make us feel that we are not alone in this fight, but surely must be the spark that keeps it going."

F. B. I. ACTIVITY

Regarding the intimidation of the medical profession, Mrs. Foster stated:

"I am sure most of you know that in the recent weeks the A.M.A. Headquarters in Chicago, and some sixty other State and County Societies throughout the country have been swarming with F. B. I. investigators, going over all their records. Of course we know this is in retaliation of the part the doctors played in defeating the President's re-organization plan. This makes us realize just how dangerous the situation is when the government will go to such lengths to intimidate the medical profession."

INDIVIDUAL RESPONSIBILITY

"In conclusion, in urging you to assume your individual responsibility and to work untiringly for the things for which you stand, I would like to quote two little quips we heard at the national meeting:

'People who do things make mistakes, but don't make the mistake of doing nothing.'

'Even if you are on the right track, if you sit still you will be run over.'"

ARE YOU ASHAMED?

Shame implies dishonor. It further implies consciousness of dishonor. The recent activity of the Department of Justice constitutes a severe abuse of public power in the opinion of the medical profession in general. The current opinion is simply that the attack on the medical societies is politically motivated with the express intention of discrediting and intimidating the societies in the hope that the fight against socialized medicine will be slackened.

The profession has in its ranks, however, physicians who disagree, and the following letter, written by that altruistic proponent of socialized medicine, our old friend, Channing Frothingham, to the editor of the **New England Journal of Medicine** sets forth the train of thought of these individuals:

A PHYSICIAN DISAGREES

TO THE EDITOR: *Fair-minded physicians who are members of the American Medical Association must feel ashamed of the official statement put out by the Board of Trustees of the Association in the October 15 issue of the* JOURNAL. *In this statement the Trustees accuse the Department of Justice of the United States of waging a campaign to discredit American medicine and terrorize physicians into abandoning their opposition to compulsory health insurance. A careful perusal of the complete statement fails to show any concrete evidence to support this claim. A series of assumptions apparently forms the basis for this attack upon the integrity of the Justice Department of the United States.*

In view of the past history of the American Medical Association and the evidence of persisting activities on the part of various groups in organized medicine, in violation of existing laws, to interfere with the development of plans to improve the delivery of medical care it seems that the Trustees are not in a very satisfactory position to try to besmirch the activities of the Department of Justice.

Actually, in 1938 the American Medical Association was convicted for breaking certain laws in the celebrated case of the Group Health Service in the District of Columbia, and this conviction was eventually upheld by the Supreme Court of The United States. In this instance it was the American Medical Association that was trying to discredit a group of physicians and to terrorize physicians from developing a plan to deliver medical care. Since then the Department of Justice has been receiving complaints from physicians and lay groups that similar tactics are being employed by organized medicine throughout the country. Investigation has provided enough evidence of disregard of the law by organized medicine to make the Department of Justice decide to bring suit in two instances. It seems only fitting in view of these facts that the Department should investigate further the numerous complaints that are made to it. To claim without evidence that such actions are aimed at terrorizing physicians rather than to compel them to obey the law seems quite unworthy of men honored by the medical profession to hold the high office of Trustees of the American Medical Association. I believe the national medical society should urge individual physicians and organized groups of physicians to obey the laws as they exist.

*If any group does not believe in the existing laws it is fitting that attempts should be made through authorized methods to change them. The profession and the public should realize that there are thousands of reputable physicians who believe in the development of a national health program to be financed in part by compulsory health insurance such as President Truman favors.**

CHANNING FROTHINGHAM, M. D.

When Dr. Frothingham states that fair-minded physicians who are members of the American Medical Association must feel ashamed, he is expressing simply his own opinion, and he should realize that the antonym of shame is pride, and truly the vast majority of the medical profession are proud of their stand as regards the Gestapo-like methods of the Department of Justice.

*(New England Journal of Medicine—Vol. 241, Dec. 1, 1949, No. 22, Page, 886.)

A. M. A. DUES

On the recommendation of the Board of Trustees, the American Medical Association House of Delegates has set A. M. A. membership dues at $25 for the year 1950. Prior to this time, there have been no A. M. A. membership dues. A physician who was a member of his local county and state societies was automatically a member of the A. M. A., although the latter association received no part of the dues paid to the local society. The non-dues paying members of the past must be differentiated from the Fellows of the scientific assembly of A. M. A. Fellows have paid annual dues of $12 as a subscription fee to the Journal of the A. M. A. Fellowship dues will remain at $12, in addition to the membership dues of $25. In 1949, there were 144,000 members of which 81,000 were Fellows.

The newly assessed dues are to be collected by the County Society Secretary, forwarded to the State Association Secretary, who in turn, forwards them to the Secretary of the A. M. A. Fellowship dues are to be paid directly to the A. M. A. as in the past. Dues for membership in the A. M. A. are now compulsory, as in any organization, but a doctor may continue to be a member of his local and state association without being a member of A. M. A.

The following members may be exempted from the payment of A. M. A. membership dues: retired members; members who are physically disabled; interns; and those members for whom the payment of such dues would constitute a financial hardship. No member should be exempted who is not exempted from his county and state society dues.

The necessity for dues to the A. M. A. at this time should be obvious to every doctor. In the past the vast program of the Association for the betterment of the health of the American people has been carried on by income from its various publications and from Fellowship dues. This program has standarized medical education, eliminated diploma-mills; standardized drugs and physical appliances; eliminated charlatans and quacks; standardized hospitals and brought about the great public health improvements of our generation. This portion of the A. M. A. program shall continue to be financed in the same manner.

Now the American people and the American doctors find themselves confronted by socialized medicine and the Welfare State. A campaign opposing this drift toward socialism was started in 1949, by the A. M. A. through voluntary assessments from its members. This highly successful National Education Campaign must be continued. Your membership dues will be used to tell the American public the truth about the Welfare State and compulsory health insurance. They shall be the judge and jury.

ROBERT B. HOMAN, JR., M. D.
El Paso, Texas

Dr. A. H. Butler

A. H. Butler, M. D., who had practiced medicine in the Southwest for more than 40 years, died last month. Dr. Butler was particularly well-known in this section of the nation because for 16 years he was superintendent of El Paso City-County Hospital, now El Paso General Hospital; and many physicians from all section of the Southwest interned under him.

Dr. Butler was born and reared in Alexandria, La. He took his college and medical degrees at Tulane University, and opened general practice in El Paso in 1908. During the first World War he served as a captain in the U. S. Army Air Corps Medical Corps and was a forerunner of the modern flight surgeon.

Following the war he practiced for 12 years in Zacatecas, Mexico, before returning to El Paso and taking over the superintendency of El Paso General Hospital. His widow is the former Cora Hickman of Alexandria. They have one son, Col. A. H. Butler of the U. S. Marine Corps.

Dr. E. Grady Causey

The recent and untimely death of Dr. E. Grady Causey of El Paso came as a shock to his many friends and colleagues in the Southwest. Dr. Causey was born in Healing Springs, Ala., in 1902 and at the age of 14 moved to Douglas, Ariz., where he graduated from high school. He took his pre-medical education at the University of Arizona and was graduated from Louisville, Ky., Medical College.

He interned at El Paso City-County Hospital; then opened practice in the West Texas metropolis in 1928. He specialized in surgery. He served as a major in the U. S. Army Medical Corps during World War II and for two years was station in India.

Dr. Causey is survived by his widow; his mother, Mrs. Z. Causey; two daughters, Mrs. Joe Tooley, 22; and Lou Ann Causey, 13; and two brothers, Dr. Paul Causey of Phoenix, and Dr. Joe Causey of Douglas.

Dr. Ernest Allen Duncan

Dr. Ernest Allen Duncan died recently at his home in El Paso after a prolonged illness. He was 65 and had practiced medicine in the Southwest for more than 30 years. He was particularly noted for his diagnostic work.

Dr. Duncan was born in Clarksburg, West Va., in 1885. He took his B. A. at Kenyon College, Ohio, and his medical degree at Western Reserve University in Cleveland. He was a member of Phi Beta Kappa, Delta Kappa Epsilon, and Nu Sigma Nu.

He came west for reasons of health, practiced briefly in Albuquerque and then moved to Silver City, N. M., where he lived and practiced for several years.

During World War I he served as a captain in the U. S. Army Medical Corps. After demobilization he moved to El Paso where he maintained his office and practice until his death. He is survived by his widow, the former Elizabeth Terry.

ARIZONA PSYCHIATRISTS MEET

The Arizona Society of Psychiatry and Neurology will meet at 3 p. m., March 18 in Tucson Medical Center, Tucson.

Dr. Tracy J. Putnam, eminent neurologist, will speak on "The Treatment of Epilepsy."

PHILIP S. GREENBAUM, M. D., *Tucson*

NEW MEXICO SOCIETY MEETING LECTURE SUBJECTS ANNOUNCED

Guest speakers for the annual meeting of the New Mexico Medical Society, May 4-6 in Milton Hall of New Mexico Agricultural and Mechanical College, have announced their subjects.

Dr. J. S. Speed will present: 1. Treatment of Ruptured Intervertebral Discs and 2. Surgical Treatment of Difficult Nonunions of Long Bones by Means of Bone Grafts.

Dr. Allen J. Enelow's subjects will be: 1. Alcoholism: Problems of Treatment and Research; and 2. A Psychiatric Viewpoint in the Practice of Medicine.

Dr. Henry M. Winans will present: 1. The Significance of Pain, and 2. Who Has Heart Disease?

Dr. Willard R. Cooke has chosen: 1. Moot Issues in Gynecology; and 2. Dystocia.

Dr. Nathan A. Womack's subjects will be: 1. Benign Lesions of the Breast, and 2. Surgical Treatment of Peptic Ulceration.

Dr. Russell J. Blattner will present: 1. Diagnosis and Therapy of Virus and Rickettsial Infections, and 2. Meningitis.

LELAND S. EVANS, M. D., *Las Cruces, N. M.*
Regional Editor

EFFECT OF NITROGEN MUSTARD ON RENAL MANIFESTATIONS OF HUMAN GLOMERULONEPHRITIS

"Since there is reason to believe that diffuse glomerulonephritis may be the result of immunological alteration in renal tissue, it seemed conceivable that a common factor might be operative in infection and following the administration of [nitrogen mustard]."

"Observations were made on daily weight, 24 hour urinary volume and urinary protein excretion, rate of glomerular filtration . . . and renal plasma flow . . . in . . . patients with chronic diffuse glomerulonephritis in the nephrotic phase."

"HN_2 was administered intravenously to 3 patients in 2 doses of 0.2 mg per kilo on successive days . . . [These] doses of HN_2 reduced proteinuria but diuresis failed to occur in 2 patients with advanced chronic diffuse glomerulonephritis with marked renal functional impairment. However, in one patient with minimal renal functional impairment, administration of HN_2 was followed on 2 separate occasions by diuresis, marked reduction in proteinuria and concomitant increase in filtration rate, a combination of effects consistent with a return of glomerular function towards normal. Our observations indicate that reversal of renal manifestations of human glomerulonephritis can be induced by HN_2. This study is being extended to include patients in earlier phases of glomerulonephritis." — Chasis, H., Goldring, W., and Baldwin, D.S., *Proc.Soc.Exper.Biol.&Med.* 71:565, 1949.

PRESTIGE OF GENERAL PRACTITIONER

In a paper, "Upholding the Prestige of the General Practitioner" by Wingate M. Johnson, M.D., read at the General Practitioner session of the American Medical Association held in Cleveland (January 6, 1948) the Council of Medical Education and Hospitals was quoted as follows: ". . . it was never intended that staff appointments in hospitals generally, or even in hospitals approved for residencies, should be limited to board-certified physicians as is now the policy in some hospitals. Such policies . . . are detrimental to the health of the people, and therefore to American Medicine. . . . ."

The above statment, together with a request that it be implemented, should be sent by the American Medical Association to the administrative body of every hospital in the United States.

THE PRESENT STATUS OF ANTIBIOTICS*

A Discussion for the General Practitioner

By William A. H. Rettberg, M. D., Denver, Colorado

Antibiotics are substances produced during the growth of various micro-organisms which inhibit the growth of **other** micro-organisms. These substances exert a definite chemical and biologic effect upon certain micro-organisms and perhaps upon their products. The mechanism of action of the antibiotics is not definitely known either in vitro or in vivo. In the case of penicillin, it is possible that in the test tube at least, there is a blocking of certain enzyme systems or interference with the nutrition concerned with the growth and multiplication of the particular micro-organism[1]. When we hope than an antibiotic may have a beneficial effect in certain diseases we are thinking not only of the diseases caused by bacteria such as streptococcus viridans or typhoid, but also of parasitic diseases such as amoebiasis and trypanosomiasis; of Rickettsial diseases such as Rocky Mountain Spotted Fever and typhus; and even of virus diseases such as the majority of childhood diseases, virus pneumonia or the common cold; or of those diseases caused by fungi, yeasts, or spirochetes. The goal is to find antibiotics which will be effective against all pathogens.

FRUITFUL FIELD

Our search has barely begun but it is a fruitful field in which to search, for there may be as many antibiotics as micro-organisms. The early bacteriologists had such a "new world" in which to work but without help from the modern biochemist. It is our purpose here to set before you established facts concerning antibiotics that we may intelligently use these tools, which have been forged with such great effort. One must know with what pathogen he is dealing in order to decide what treatment is best. Because of present high costs, one should know the optimum dosage of the particular antibiotic in a specific disease. It is obvious that we do not mean a life-saving medication should be withheld because of cost. But we often tend to over-treat infections with antibiotics. Especially is this true in hospital practice where penicillin continues to be given in larger doses and over longer periods of time than is necessary, in spite of the patient's protestation that his fundament is a bit irritated. The cost of an antibiotic is also determined by its auxiliary costs, i.e. whether the patient will require a physician or nurse for its administration, or whether the antibiotic may enable the patient to be treated at home, thus reducing the patient's expense[3] and also saving a much-needed hospital bed. One must use the drug which will be of greatest benefit to the patient, taking into consideration the factors of curability of the specific disease, toxicity of drugs used, period of disability of patient, necessity for hospitalization and amount of attendance by nursing and medical personnel.

CLOSELY RELATED

Although sulfonamides are not considered antibiotics but rather chemotherapeutic agents, the two substances are closely related; and one should not forget that treatment with a chemotherapeutic agent may be the one of choice; or combination with an antibiotic may be of greatest benefit to the patient. Since Ehrlich's enthusiasm for chemotherapy and Pasteur's observation that anthrax is inhibited by other bacteria[4], we have been prone to think of two schools of thought or two therapeutic agents: 1. Chemotherapy; 2. Antibiotics. Sulfa drugs have been synthesized but so has chloramphenicol ("chloromycetin")[14]; and streptomycin[11] and aureomycin[15] have both been crystallized. The mode of action of these substances may not be dissimilar. A recent handbook of drug therapy[5] considers both sulfonamides and antibiotics in the same volume, and this is as it should be.

Intelligent use of antibiotics demands that the physician know with what pathogen he is dealing. Much data is available concerning the susceptibility of various pathogens to certain doses of drugs but we cannot discuss each organism and each disease here which might be treated with antibiotics. One should consult a handbook such as "The A-B-C's of Sulfonamide and Antibiotic Therapy[5]" (which I hope will be continually revised and brought up to date) or the current literature. Fortunately, the Council-accepted products contain valuable package inserts which give good advice concerning indications, methods of use and toxicity. We shall confine ourselves here to the more common every day diseases in which antibiotics are valuable. The indiscriminate use of these agents for undiagnosed conditions is to be condemned because all of the antibiotics in use today have some undesirable side reaction, in addition to the fact that insufficient treatment may result in a resistant organism with consequent unsuccessful or difficult treatment of the disease.

Table 1. — Choice of Antibiotics Today (Nov. 1, 1949) in Infections by Microorganisms

	Penicillin	Streptomycin	Aureomycin	Chloramphenicol
1. Pneumococcus (Pneumonia, Mastoiditis, Meningitis)	A	C	B	C?
2. Streptococcus				
a. Group A beta hemolytic (most human infections)	A	C	B	0
b. alpha hemolytic or viridans (SBE & chronic infections)	A	C	B	0
c. Group D, "entero-cocci" (strep. fecalis)	B	0	A	0
d. Anaerobic (post-partum, skin infections, pneumonia & empyema)	A	--	--	--
3. Staphylococcus	A	0	B	0
If severe infection such as bacteremia	A+	0	B+	0
4. B. anthracis (Anthrax)	A (+S.D.)	0	--	--
5. Clostridia (Gas Gangrene, tetanus) (Surgery of most importance here)	A (+S.D.)	0	--	?
6. M. tuberculosis	0	A (PAS)	0	0
7. Meningococcus	A (+S.D.)	0	B? (1 case bacteremia)	--

Legend: A, first choice; B, second choice; C, third choice; D, fourth choice; 0, of no value; (--), value is unknown; (?), indicates choice is questionable because cases reported are too few; (+), indicates combined therapy necessary. S.D. = sulfadiazine. S.M. = sulfamerazine. PAS = para-aminosalicylic acid. S.A. = sulfacetimide.

MINOR INFECTIONS

For treating minor infections involving skin or mucous membrane, penicillin or sulfonamide powders,

*From the Department of Internal Medicine, University of Colorado School of Medicine. Presented at the Joint Meeting of the Southwestern Medical Association Conference and the New Mexico Division of the American Cancer Society, Albuquerque, N. M., Nov. 12, 1949.

solutions, salves, creams or pastes should not be used for fear of sensitizing the patient[6]. Reactions to penicillin G may be the result of such acquired sensitization or a sensitization acquired by contact with a related fungus (athletes' foot). Reaction to crystalline penicillin administered parenterally may be immediate, delayed a few days while treatment is continuing, or delayed from 7 to 15 days after treatment is stopped. These allergic reactions are sometimes very severe and prolonged with giant urticaria and joint effusion incapacitating the patient for many weeks. All the symptoms and signs of severe serum sickness may occur[7] with fever, intense epigastric pain, nausea and vomiting, swelling of the rectal mucous membrane, joint effusion, myalgia and arthralgia, and painful lymphadenopathy. If generalized exfoliative dermatitis or vesicular or bulbous eruptions appear, the drug should be discontinued. Asthma has been produced as a result of penicillin inhalation and edema of the epiglottis and larynx has been noted[8]. When one considers the amount of both sulfonamides and crude penicillin that has been used in this country, the per cent of untoward reactions must indeed be small. However, the greatest benefit to both physician and patient will result only if the physician is aware that untoward reactions may occur. A stubborn conjunctivitis or corneal ulcer may necessitate local treatment with penicillin ointment or drops in addition to parenteral treatment, but the ordinary conjunctivitis may be treated with a solution of Zephiran[R] or Phemerol[R]. If this latter treatment does not suffice, culture should be taken. The culture may reveal E. coli or P. vulgaris, in which case, sulfadiazine orally would be the treatment of choice.

Table 2. — Choice of Antibiotics Today (Nov. 1, 1949) in Infections by Microorganisms

	Penicillin	Streptomycin	Aureomycin	Chloramphenicol
8. Gonococcus	A (S.D.)	B	C	C
9. Pertussis	0	--	A (in mice)	? (A in vitro)
10. H. Influenzae				
Moderate	0	0	A	--
Severe (meningitis)	0	B (+S.M. or S.D.)	A (+S.M. or S.D.)	--
11. Klebsiella pneumoniae (Friedlander's, B. mucosus capsulatus)	0	A (S.M.)	0	B?
12. Aerobacter aerogenes (B. lactis aerogenes)	0	B	A	A
13. E. Coli	0	B	A	A
14. E. typhosa	0	0	B	A
15. Salmonella Group (Paratyphoid)	0	0	C	A
16. Dysentery Bacilli	0	0	--	A??
17. B. tularense (Pasturella tularense)	0	B	A	A?
18. B. pestis (Pasturella pestis) (plague)	0	A	--	--
19. Brucella (acute stage) (Undulant Fever)	0	0	A	A

Legend: A, first choice; B, second choice; C, third choice; D, fourth choice; 0, of no value; (--), value is unknown; (?), indicates choice is questionable because cases reported are too few; (+), indicates combined therapy necessary. S.D. = sulfadiazine. S.M. = sulfamerazine. PAS = para-aminosalicylic acid. S.A. = sulfacetimide.

SURFACE INFECTIONS

In treating surface infections, such as staphylococcic infection of the skin, tyrothricin consisting of tyrocidine and gramicidin may be used. It is extracted from Bacillus brevis. This antibiotic is only for topical application in treating gram-positive infections. It cannot be used intramuscularly nor intravenously nor subcutaneously, as it is very toxic. Even irrigating a cavity has its dangers, as it may enter a blood vessel on a granulating surface. Occasionally one finds it irritating to certain skins. Bacitracin, an extract of Bacillus subtilis, has also proved efficacious for minor skin infections. Furacin[R] ointment, 0.2% nitrofurazone N.N.R., has also been effective in our hands for treating minor skin infections. The latter is entirely synthetic. Sensitivity reactions to tyrothricin, bacitracin and furacin are rae; but even if a sensitivity reaction occurs, one hasn't lost much nor sacrificed the chance of using a potent antibiotic or chemotherapeutic agent such as penicillin or sulfadiazine.

SODIUM SALT

Penicillin is usually supplied commercially as the crystalline sodium salt and is mostly penicillin G. In treating a serious blood stream infection ,it is desirable to obtain blood cultures to determine the offending organism. At the outset, one must decide which single therapeutic agent or combination of agents must be given to cure the patient. Many times, the clinical picture is that of subacute bacterial endocarditis and streptococcus viridans will be cultured from the blood. Repeated attempts to culture the organism should be made if no growth is obtained upon the first attempt. Even if the first culture is positive, more than one culture should be obtained to corroborate the findings. If possible, the sensitivity of the organism to antibiotics should be determined. Penicillin will often be the antibiotic chosen. If it is found that the organism is inhibited in the test tube

Table 3. — Choice of Antibiotics Today (Nov. 1, 1949) in Infections by Microorganisms

	Penicillin	Streptomycin	Aureomycin	Chloramphenicol
20. Pseudomonas Aeruginosa (B. pyocyaneus)	0	A	0	A or B
21. Proteus vulgaris	0	B	0	A
22. Ducrey's bacillus (chancroid)	0	A	A	0
23. Rickettsiae (typhus, scrub typhus, Rocky Mt. spotted, Q fever, Rickettsial pox)	0	0	A	A
24. Ornithosis (Psittacosis)	B	0	A	A?
25. Lymphogranuloma Venereum	B	0	A	A
26. Virus of atypical Pneumonia	0	0	A	A
27. Virus of Influenzae	0	0	0	0
28. Common cold	0	0	0	0
29. Rat Bite Fever (Haverhill Fever)				
a. Spirillum minus	B	0	A	--
b. Streptobacillus moniliformis	0	A	--	--
30. Treponema				
a. Syphilis	A	0	B	0 (in vitro & in animals)
b. Yaws	A	0	--	--
31. Leishmaniasis (Granuloma inguinale, Oriental sore)	0	A	A	A
32. E. histolytica	0	0	A	0
33. Trachoma	A (or S. D. orally or S.A. locally)	--	A (local)	--

Legend: A, first choice; B, second choice; C, third choice; D, fourth choice; 0, of no value; (--), value is unknown; (?), indicates choice is questionable because cases reported are too few; (+), indicates combined therapy necessary. S.D. = sulfadiazine. S.M. = sulfamerazine. PAS = para-aminosalicylic acid. S.A. = sulfacetimide.

by a minimum of 0.1 unit of penicillin per cc., we feel that the blood level during treatment should preferably be kept at four to five times this figure, i.e. 0.4 to 0.5 units per cc. According to Long, a single intramuscular dose of crystalline penicillin will produce the following blood concentrations in 15 to 30 minutes: 20,000 units — 0.5 to 0.8 units; 30,000 units — 0.75 to 1.25; 40,000 units — 1.0 to 1.75; 50,000 units — 1.5 to 2.0; 100,000 units — 2.0 to 5.0; 200,000 units — 4.0 to 7.0[9]. Since the level of penicillin in the blood falls markedly at the end of 3 hours, it is desirable to give it every 2 hours. By using a somewhat larger dose, it could be injected at 3 hour intervals. In the case of subacute bacterial endocarditis, treatment must be continued for 28 to 42 days. There should be a good clinical response in 3 to 4 days as evidenced by decrease, in both fever and tachycardia. Weekly blood cultures, using penicillinase (or para-aminobenzoic acid if sulfa is also being given) in the culture medium, should be done. If the organism is one which should be inhibited by penicillin but the clinical course indicates that satisfactory progress is not being made, then dosage of penicillin must be increased[13]. Sometimes, a higher blood level may be sustained by a slow continuous intravenous drip; or caronamide may be used to decrease the excretion of penicillin by the kidneys; or an appropriate sulfa drug may have to be given orally in addition to the penicillin. We have had a case of strep. viridans bacteremia, in a girl with patent ductus arteriosus (producing showers of pulmonary emboli), in whom the daily dose of penicillin had to be increased to 10,000,000 units. We feel that the very minimum in subacute bacterial endocarditis is 500,000 units per day.

EVERY SIX HOURS

Recently, we have been using fortified procaine penicillin in appropriate dosage and giving it every 6 hours around the clock. Depot type of penicillin therapy has a definite place, and satisfactory sustained blood levels may be obtained with it. This reduces the number of injections which is so important to the patient. However, if one has to give 10,000,000 units a day, the intramuscular route can hardly be used because of the pain resulting from the large volume of each injection and the frequency of injections. Under such circumstances, the continuous intravenous drip is better. We are dwelling upon penicillin in SBE because it is a condition which is so commonly treated and which I believe is usually curative. Also, proper treatment of this condition illustrates well the use of antibiotics in general.

As to giving penicillin orally, one should remember that it is destroyed by the gastric juice. It is, however, absorbed into the blood very rapidly and is all excreted in the urine in 6 hours. It is necessary to give five times the parenteral dose when giving it orally[10]. The oral use of penicillin, as a prophylactic measure in cases of rheumatic fever, is not recommended. It has no value in the prevention of the common cold[21].

Table 4. — Choice of Antibiotics in Certain Clinical Conditions

	Penicillin	Streptomycin	Aureomycin	Chloramphenicol
1. Pneumonias (Remember that shifts in bacterial flora occur in debilitated patients)				
a. Pneumococcic	A (S.D.)	C	B	C?
b. Strep. beta hemolytic	A (S.D.)	C	B	0
c. Staphylococcic	A+	0	B+	0
d. Friedlander's (K. pneumoniae)	0	A (+S.M. or S.D.)	0	B?
e. H. Influenzae	0	B (+S.M. S.D.)	A (+S.M. S.D.)	--
f. Tularemic	0	B	A	A?
g. Atypical Types				
(1) Virus	0	0	A	A
(2) Rickettsiae - Q fever	0	0	A	A
h. Tbc.	0	A (+PAS)	0	0

Legend: A, first choice; B, second choice; C, third choice; D, fourth choice; 0, of no value; (--), value is unknown; (?), indicates choice is questionable because cases reported are too few; (+), indicates combined therapy necessary. S.D. = sulfadiazine. S.M. = sulfamerazine. PAS = para-aminosalicylic acid. S.A. = sulfacetimide. S.T. = sulfathalidine.

Table 5. — Choice of Antibiotics in Certain Clinical Conditions

	Penicillin	Streptomycin	Aureomycin	Chloramphenicol
2. Sub-acute Bacterial Endocarditis				
a. Alpha hemoly. strep (viridans)	A	C?	B	0
b. Beta hemoly. strep	A+ (S.D.)	C?	B	0
c. Streptococcus fecalis	B+	C?	A+	0
d. Staphylococcic	A+	0	B+	0
e. Micrococcus (Staph) Tetragenus 45	A+	B+	--	--
f. Gram-Negative Bacilli	0	A+	A+	A+
3. Urinary Tract infections (Remember surgery often more important)				
a. E. coli	0	B (S.A or S.D)	A	A
b. Aerobacter aerogenes (B. lactis aerogenes)	0	B (S.A or S.D)	A	A
c. Proteus vulgaris	0	B (S.A or S.D)	0	A
d. Pseudomonas aeruginosa (B. pyocyaneus)	0	A	0	A or B
e. Streptococcus fecalis	B	0	A	0
f. Staphylococcus	A	0	B	0

Legend: A, first choice; B, second choice; C, third choice; D, fourth choice; 0, of no value; (--), value is unknown; (?), indicates choice is questionable because cases reported are too few; (+), indicates combined therapy necessary. S.D. = sulfadiazine. S.M. = sulfamerazine. PAS = para-aminosalicylic acid. S.A. = sulfacetimide. S.T. = sulfathalidine.

STREPTOMYCIN

Streptomycin inhibits many gram-negative organisms but is a drug having severe toxic reactions most important of which is damage to the nuclei of the eighth nerve. Fortunately, deafness and vertigo do not usually develop with the shorter courses of treatment, but these symptoms may appear the first week. Since signs of eighth nerve damage may persist for months, the patient receiving streptomycin should be checked daily for development of vertigo or deafness. The physician must decide whether it is worth while to continue treatment in the face of developing eighth nerve damage. In the tuberculous, who receive long courses of streptomycin, vertigo in some degree occurs in 96% (usually about the fourth week of therapy)[12]. Nausea, vomiting, dysuria, local irritation and eosinophilia are other side effects.

Streptomycin cannot take the place of standard procedures in treating pulmonary tuberculosis. Bed rest, pneumothorax, pneumonolysis, thoracoplasty and other surgical procedures are as important as ever. Streptomycin is an adjunct to present-day therapy and only inhibits the progression of the disease. It is useful in an old case that suddenly shows a small exudative flare-up; or in a miliary dissemination; or in preparation for thoracic surgery with subsequent post-operative therapy. We do not have the time

here to adequately discuss the use of streptomycin in pulmonary tuberculosis. The tubercle bacillus rapidly develops a resistance to streptomycin. In order to prevent the development of a resistant strain, we customarily limit the period of administration of streptomycin, giving 0.5 Gm. twice daily intramuscularly for only 28 days with or without paraminosalicylic acid (PAS) 12. Gm. daily orally. A rest period of 28 days (during which PAS may be given) is then allowed, after which the course of streptomycin is repeated for 28 days to be followed by another rest period, alternating so long as indicated[16]. Streptomycin as the sulfate or calcium chloride complex is more efficacious than the dihydrostreptomycin, although the latter does less eighth nerve damage. In tuberculous meningitis, the daily dose is increased to 2.0 Gm. and treatment is often continuous for 60 to 120 days. In this serious infection, we do not employ streptomycin intrathecally. The antibiotic is extremely irritating in the spinal canal and results are no better than with intramuscular administration alone[16].

AUREOMYCIN AND CHLORAMPHENICOL

Aureomycin is derived from a fungus or "ultramold", a new species of the Actinomycetes called Streptomyces aureofaciens[17]. Chloramphenicol or Chloromycetin^{R} is derived from Streptomyces venezualae[18]. Neither of these antibiotics has had any serious toxic or sensitivity reaction reported to date. Nausea, vomiting and looseness of the bowels may occur but in our experience, this happens mainly with aureomycin. This is controlled by giving aluminum hydroxide with each dose of aureomycin. We have also noted an excoriation of the perineum in two patients having diarrhea while taking aureomycin; one of these had some dysuria. Also noted has been euphoria and agitation in two patients taking aureomycin. These and similar reactions were noted by Long et al[3]. With chloramphenicol given to two patients with fever, myalgia and headache of undetermined origin (one of whom had a pleocytosis of the spinal fluid), an interesting side reaction was noted. Both patients developed in 3 days a cheilosis and a sore desquamating tongue (after taking 500. mg. every 3 hours for 48 hours). The oral lesions in both patients cleared promptly with vitamin B complex orally (Surbex^{R}, 2 tablets four times a day). One of these patients also showed a depression of the blood prothrombin which responded to synthetic vitamin K orally. We have assumed that chloramphenicol produces avitaminosis occasionally by its action on the intestinal tract. In view of the fact that the antibiotic inhibits the organisms composing the intestinal flora, it is not surprising that the manufacturers have recommended it for sterilizing the intestinal tract preoperatively.

GIVEN PARENTERALLY

Aureomycin may be given parenterally in severely ill patients. Intramuscular administration is quite painful, probably because of the acidity of the solution which cannot be altered if the drug is to retain its potency[19]. It is best given intravenously if the parenteral route is necessary. The Lederle Laboratories supply it in a 100. mg. vial to be dissolved in 10 cc. of L(-) leucine solution 2.6%. This is injected slowly (5. min.) and is given every 6 hours in adults. The per Kg. dosage is 15. mg. for 24 hours.

Chloramphenicol is administered only orally. Blood assay and sensitivity tests are not practical for ordinary clinical use for either chloramphenicol or aureomycin[3,20]. Simply increase the dosage, if the patient is not responding, when infected with an organism shown to be susceptible to the antibiotic.

It is advisable to begin oral treatment with a priming dose of both aureomycin and chloramphenicol, in order to obtain the desired level in the body fluids. For chloramphenicol, the priming dose is 60. mg. per Kg. in both children and adults; for aureomycin, it is 10. to 20. mg. per Kg. in children depending upon the severity of the infection, while it is 10. to 15. mg. per Kg. in adults[3]. The peak blood level is reached in about 2 hours and has decreased to a low level in 8 hours. Maintenance dosage should therefore be given every 4 hours and preferably every 3 hours in severe infections. It has been noted that if intestinal symptoms occur, more frequent but smaller dosage is desirable. The maintenance dose of chloramphenicol is usually 30 to 60 mg. per Kg. but may be increased from 60 to 120 mg. per Kg. in severe infections. This applies to both children and adults[3]. The maintenance dose of aureomycin varies in children from 25 to 50 mg. per Kg. in moderate infections to 100 mg. per Kg. in severe infections; in adults, the maintenance dose being 30. mg. per Kg. in moderate infections to 50. to 60 mg. per Kg. in severe infections[3].

Table 6. — Choice of Antibiotics in Certain Clinical Conditions

	Penicillin	Streptomycin	Aureomycin	Chloramphenicol
4. Preoperative & Postoperative in Intestinal Surgery	0	B	A?	A (S.T.)
5. Preoperative & Postoperative in Pulmonary Surgery	A	A	--	--
6. Ulcerative Colitis (Idiopathic)	0	0	0	?
7. Otitis Media	A	C (sulfa)	B	--
8. Poliomyelitis	0	0	0	--
9. Guillain-Barré's Syndrome	0	0	0	--
10. Hepatitis	0	0	0	--
11. Infectious Mononucleosis	0	0	0 Borate 0.5% sol. locally	--
12. Ocular Infections				
a. Staphylococcus, Pneumococcus, H. Influenzae, Morax-Axenfeld	Not desirable		A	--
b. Inclusion conjunctivitis, trachoma, other viruses	locally		A	--
c. Herpetic conjunctivitis			A?	--
d. Epidemic keratoconjunctivitis			A	--

Legend: A, first choice; B, second choice; C, third choice; D, fourth choice; 0, of no value; (--), value is unknown; (?), indicates choice is questionable because cases reported are too few; (+), indicates combined therapy necessary. S.D. = sulfadiazine. S.M. = sulfamerazine. PAS = para-aminosalicylic acid. S.A. = sulfacetimide. S.T. = sulfathalidine.

MAINTENANCE DOSE

The maintenance dose is continued until the patient is clinically improved and the temperature has been normal for 48 hours. If the infection is due to Rickettsiae, the drug may then be withdrawn but in the case of viral and bacterial infections, a relapse is likely to occur if the drug is withdrawn and dosage should be continued for about 7 days, although the amount given may be halved at this time. In the case of severe infections such as a septicemia or meningitis, the maintenance dose should be continued until the patient is clinically well[3]. Relapses in typhoid fever are common[22] and this disease should be treated for more than eight days if relapse is to be avoided. Eleven to fourteen days is probably a sufficient course. The relapses respond satisfactorily when the drug is resumed, but in view of the possibility of initiating a carrier-state (which does **not** respond to antibiotic therapy), adequate treatment is the safer course. Brucellosis is another disease which responds in the

acute stage to both of these antibiotics but which is also prone to relapse and become chronic. Treatment then becomes difficult. It has been recommended that the "block method" of therapy be tried in diseases tending to relapse, i.e. 10 to 14 days of intensive treatment followed by a rest period of 10 days before again giving 10 to 14 days of treatment.

ANTIBIOTIC OF CHOICE

Space is not available here to discuss the antibiotic of choice in the several diseases or specific infections. This will be shown by the table. If there is more than one first choice, the clinician will be guided by the patient's reaction to the drug, its ease of administration, or other factors known only to the physician or patient. Combined use of these agents is often desirable. The entire bibliography has served as a guide in preparing this table. The literature on this subject is very extensive. Therefore, articles which simply substantiate findings already noted have been omitted from the bibliography or are included in the bibliographies of the articles listed. Changes are occurring daily and we are simply attempting to assess the literature to date.

The tables indicate the relative value of penicillin, streptomycin, aureomycin and chloramphenicol in various infections. In addition, the sulfa drugs are listed parenthetically when it is felt that they have a definite place in treating that specific infection. If combined treatment with more than one antibiotic, or antibiotic plus sulfa or other drug is advisable, then that fact is also noted. Frequently, one may employ a sulfa drug alone and the sulfa drug is then simply listed beneath the antibiotic score (vid. sulfa in Friedlanders pneumonia where the patient is not severely infected or in urinary tract infections which often respond to sulfa alone).

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THE RED CROSS NATIONAL BLOOD PROGRAM

Reasons For A Nation-Wide Blood Program

1. There is a need for human blood in every community of the county.
2. There was no national agency or organization to supply needed human whole blood and products to physicians and hospitals for civilian patients.
3. There was no provision for the availability and distribution of blood on a nation-wide scale, wherever disaster or other emergency occurs.
4. A nation-wide program makes research possible on a national scale with results available to the entire nation.
5. A nation-wide program provides the advice and guidance of leading scientists to the entire country.
6. A nation-wide program provides uniform technical standards throughout the country.
7. Cost of starting and maintaining a blood program is far beyond the reach of most communities.
8. Purchasing equipment on a large scale reduces the cost of the equipment for each center.
9. More effective education of the people can be done on a nation-wide scale.
10. Films, exhibits, posters, and other educational media can be provided more efficiently through a national program at less cost.

PURPOSE

To supply human whole blood and blood derivatives without charge to physicians for all who need them.

SUPPLY

1. Surveys showed that of the 6,000 hospitals in the country, only one out of every five had a private blood bank. These were unable to supply the total amount of blood needed for their own hospitals.
2. Commercial blood banks in some cities were unable to supply the amount of human blood needed in the hospitals of the city. When blood was available, the cost per pint (often as much as $85 per pint) was usually beyond the financial means of a majority of people.

ESTIMATED NEEDS

A total of 3,700,000 pints of blood annually for civilian, veteran, Army and Navy and U. S. Public Health hospitals. (Based on five pints per year per general hospital bed, and 1 pint per year for each neuropsychiatric or tuberculosis hospital bed.)

COST

No charge will ever be made by Red Cross for the blood itself.

APPROVAL BY MEDICAL PROFESSION

The American Red Cross National Blood Program was approved in principle by the following organizations, among others:

American Medical Association
American Hospital Association
Catholic Hospital Association
American Public Health Association
Association of State Territorial Health Officers
American Dental Association
United States Public Health Service
Veterans Administration
Army
Navy

Red Cross chapter representatives in 18 regional meetings. Authorized June 1947 by Board of Governors of the American National Red Cross.

HEADING THE NATIONAL BLOOD PROGRAM

Director, National Blood Program

Adm. Ross T. McIntire, formerly Surgeon General of the Navy and White House physician.

Medical Director, National Blood Program

Dr. Louis K. Diamond, Director of Boston Children's Hospital Blood Bank and Research Laboratory; director of Blood Grouping Laboratory of Boston; author of "Atlas of the Blood of Children."

Assistant Director, National Blood Program

Gen. Harry F. Thompson (U.S.A. Retired), formerly administrator of Red Cross Service to Veterans.

DEVELOPMENT OF THE NATION-WIDE BLOOD PROGRAM

Development will be gradual and painstaking, in close cooperation with local medical societies.

No local program can or will be instituted by Red Cross without the prior approval of local medical societies, hospital organizations, health department officials.

There are FOUR phases in the program: (1) collecting blood (2) processing blood for use as whole blood and blood derivatives, including packaging and storage (3) distribution of both the whole blood and blood products for use by physicians and hospitals for any patients needing them (4) continuous research and investigation of the quality of the products, their safety, and important uses.

EXISTING FACILITIES

The National Blood Program of Red Cross does not plan to establish centers in those communities where needs for blood are being met by existing facilities.

STANDARDS

1. Each center has a Medical Advisory Committee, appointed by the **local medical society.**
2. Each center has a physician medical technical director, who is nominated by the **local medical society,** and approved by the Red Cross chapter board and the administrator, National Blood Program.
3. Each center is under the direct supervision of the medical technical director assisted by registered nurses and laboratory technicians.
4. A physician is always in the center while blood is being taken from donors.
5. Technical procedures have been approved by the National Institute of Health.
6. As better techniques and procedures are developed and **proved,** they will be adopted, utilizing the latest and highest standards throughout the country at all times.

PRODUCTS

Whole blood. "Whole blood" is blood only. Technically "preserved whole blood" or "modified whole blood" is the term applied to blood with a preservative or any other substance added; however, the term "whole blood" is generally used to denote blood plus preservative. The preservative is usually a solution containing citric acid, sodium citrate, and dextrose—called ACD solution. Donated blood must be typed, and the donor's and recipient's bloods must be cross-matched for compatibility before transfusions are made. Other tests are also necessary. "Whole blood" must be kept under refrigeration from 4 to 6 degrees centigrade, under which conditions it may be kept about 21 days. Used whenever large amounts of blood have been lost as a result of accident, injury, childbirth, or in certain diseases which result in blood cell depletion or injury. Chief of these are infections, hemorrhagic diseases, and chronic anemias.

Plasma. The liquid portion of blood after removal of cells. May be stored in liquid, frozen, or dried forms. Liquid and dried forms are most frequently

used. Need not be typed and may be stored much longer, which permits its use as a substitute for whole blood in emergency cases such as accidents, and in remote areas where facilities for administering whole blood are not available.

Serum Albumin. One of the fractions made from plasma. Used in the treatment of certain kidney diseases and for the emergency replacement of lost blood volume.

Immune Serum Globulin. Used for the modification or prevention of measles.

Antihemophilic Globulin. Used to control bleeding when it is the result of hemophilia (a chronic condition in which blood will not clot).

Fibrinogen and Thrombin. Two plasma proteins which when combined form an artificial clot from which **fibrin film** and **fibrin foam** are made. **Fibrin film** is a cellophanelike sheet used to repair tissues in brain and nerve surgery. **Fibrin foam** is a spongelike product used to stop bleeding from surgical or accidental wounds.

RESEARCH

1. Continuous research under the guidance of Blood and Blood Derivaties Committee of the Red Cross Advisory Board on Health Services.

2. This group is composed of topmost authorities on blood including, among others:

Charles A. Janeway, M.D., Chairman

Elmer L. DeGowin, M.D.	Frank W. Hartman, M.D.
Charles A. Doan, M.D.	Robert F. Loeb, M.D.
Everett I. Evans, M.D.	Isadore S. Ravdin, M.D.

3. Through this committee, clinical research to develop new products and increase the uses of existing products will continue.

DONOR REQUIREMENTS

All donors are accepted on the basis that they are capable of safely giving 500 cc of blood, equivalent to one pint.

AGE

1. Men and women, 21-59 years of age, inclusive.

2. Minors accepted only with written permission from parents or legal guardian. (Release form for this purpose will be used and properly witnessed. Some state laws differ as to what constitutes a minor, married or single. Individual centers conform to the customary practice of local hospitals.)

3. Married minors, economically independent, living apart from their parents, may be accepted without permission of parents or legal guardian. If possible, written permission of the mate should be obtained.

4. Minors belonging to armed services of the United States and Allied Nations, and members of the Merchant Marines, accepted without written parental permission, excepting members of reserve units.

5. A donor may give blood at 8-to-10-week intervals without harm. No donor may give blood more than five times in any 12-month period.

6. Medical history will be taken by a physician or registered nurse under the supervision of a physician.

7. No donor will be accepted if the physician, who is in attendance at all times, questions the advisability of a donation for the protection of the donor.

8. Pre-donation diet requirements will be under the supervision of the center's medical technical director.

FINANCING

The programs will be financed from funds raised during the Red Cross annual fund campaign.

CHAPTER PARTICIPATION

1. Chapter blood program committee to study program, develop plans, in cooperation with local medical and health authorities, and represent the chapter in its participation.

2. Secure written endorsement of the program by local medical society, public health officer, and hospital organization before any chapter is authorized to participate in the National Blood Program.

3. Furnish volunteers.

4. Recruit donors.

GENERAL BACKGROUND INFORMATION

1. Scientific research, accelerated by the war emergency, brought many new discoveries to aid medical science, among them the method of preserving whole blood up to 21 days.

2. The research and development of blood fraction products from the proteins of human plasma — a direct outgrowth of the war — have introduced a revolutionary epoch of great significance to peacetime medical practice.

3. Out of the urgency of war — and the knowledge gained from processing civilian donations for military use — these essential blood fraction products have been made available for peacetime therapy.

4. Although blood fraction products are still on the threshold of the vast possibilities of clinical investigation, their outstanding contributions to surgical techniques, preventive medicine, and therapeutic progress already have been well established.

5. As medical scientists discover new uses for blood as a therapeutic product, greater numbers of donors are needed.

6. One recipient of blood may require the donations of several people with each donor able to give only one pint at a time. For instance, only about one out of 200 donors has type AB negative. This is a "rare type" — (without sufficient donors all types are rare) — but one recipient may require a center's entire supply of AB negative which can only be replaced at the slow rate of one pint for each 200 donors.

7. The average healthy person weighing 110 pounds has about 12 to 14 pints of blood.

8. The system begins to replace blood immediately after donation and within from 48 to 72 hours after donation, the **volume** is replaced.

9. Blood is a **living** fluid. It cannot be manufactured. Only from healthy **people** can this vital substance be obtained.

10. The American Red Cross is regarded as the most appropriate agency to operate a nation-wide blood program (1) because of its World War II achievement in collecting more than 13,000,000 pints of blood for our fighting men, and (2) because it is already organized in every county of every state of the nation.

11. The nation-wide blood donation program during World War II, which made possible the processing of plasma supplies for the armed forces, has been one of the greatest cooperative efforts of scientist and layman — and the resulting benefits to the national health of this country in peacetime are inestimable.

12. The American Red Cross World War II Civilian Blood Program was responsible **only** for donor recruitment and blood collection. Centers were established in 35 cities with mobile units operating in their outlying areas. All human blood collected was turned over to the Army and Navy.

13. A total of 13,326,242 pints of blood was collected during operation of the wartime program. Of this amount 374,441 pints of whole blood were used by military medical men on battlefronts following

scientific discovery of means for preserving whole blood up to 21 days.

14. The wartime program was discontinued in September 1945. Surplus plasma returned to the Red Cross by the armed forces, and derivatives made from it, are available through state health departments.

STATISTICS

1. Records show that 97.3 per cent of World War II wounded survived. Military medical authorities believe the availability in quantity **in time** of whole blood and plasma was a major factor in this low mortality figure.

2. War wounded totaled 651,911; during the same period 36,000,000 civilians suffered accidental injury. Nineteen thousand amputations were performed on members of the armed forces during World War II; during the same period more than six times as many civilians underwent amputations. Between Pearl Harbor and VJ-Day more civilians died from accidental causes in this country than were lost in the war.

3. Every 2 seconds someone is injured somewhere in this country. Ninety per cent (90%) of these serious accident cases need blood at once.

4. In 1948, according to National Safety Council reports, 1 in every 14 persons in the nation was injured. Disabling injuries totaled over 10,000,000; an increase over the previous year.

5. By the end of June 1949, 29 Red Cross regional blood centers were established in the nation. These are located at: Rochester, New York; Washington, D. C.; Atlanta, Georgia; St. Louis, Missouri; Springfield, Missouri; Omaha, Nebraska; Tucson, Arizona; Los Angeles, California; San Jose, California; Stockton, California; Wichita, Kansas; Charlotte, North Carolina; Detroit, Michigan; Lansing, Michigan; Great Falls, Montana; Yakima, Washington; Columbus, Ohio; St. Paul, Minnesota; Nashville, Tennessee; Portland, Oregon; Boise, Idaho; Louisville, Kentucky; Philadelphia, Pennsylvania; Syracuse, New York; Ashville, North Carolina; Johnstown, Pennsylvania; Mobile, Alabama; Norfolk, Virginia; and Savannah, Georgia. In addition a state-wide program in Massachusetts was operating.

6. During the fiscal year 1947-48 alone, Red Cross distributed without charge to physicians and hospitals through state health departments, more than 600,000 units of immune serum globulin used in the prevention or modification of measles. Since the commercial cost of this amount of measles serum would be nearly $3,800,000, this represents a very definite savings to the American people.

7. As of June 1948, there were more than 50 blood fractions as yet unexplored. There is no backlog of either whole blood or plasma for continued research. 2,500,000 units of plasma declared surplus at the war's end are nearly exhausted. It is urgent that some blood for research be made available.

8. There are FOUR phases in the National Blood Program: (1) collecting blood (2) processing blood for use as whole blood and blood derivatives, including packing and storage (3) distribution of both the whole blood and blood products for use by physicians and hospitals for any patients needing them (4) continuous research and investigation of the quality of the products, their safety, and important uses.

9. Reports show that more than 80,000 persons died from the atom bomb dropped on Hiroshima. Medical authorities estimate that 20,000 would have survived if adequate amounts of the whole blood had been available.

10. The presently estimated requirement for a single atom bomb detonated in the manner employed at Hiroshima is 150,000 to 200,000 units of whole blood. This is based on from one to five transfusions for each of the 80,000 casualties.

CIRCULATORY AND RENAL EFFECTS OF AMINOPHYLLINE IN CONGESTIVE HEART FAILURE

"The effects of aminophylline on patients with congestive heart failure have been studied by the simultaneous observation of the cardiac output, right atrial, pulmonary arterial and systemic arterial pressures, glomerular filtration rate, renal plasma flow and sodium excretion data. These patients were suffering from valvular heart disease and showed no evidence of primary renal disease. Aminophylline injected intravenously in 0.72 gm. doses has been found to produce a marked increase in cardiac output, accompanied by a decrease in peripheral resistance, which is of greater degree in the pulmonary than in the systemic circulation. . . . .

"Increased renal plasma flow, filtration rate and an increased rejection of sodium by the tubules also took place. These renal changes are minor in degree, however, and not of an order comparable to the modification in cardiac output (which at times is nearly tripled)." — James, D. F., Turner, H., and Merrill, A. J., Am. J. Med. 5;4:619 (Oct.), 1948.

NEW TEST FOR HYPERTENSION DUE TO CIRCULATING EPINEPHRINE

"The only clinically significant hypertension due to circulating epinephrine of which we know is associated with pheochromocytoma. This is a tumor consisting of chromaffin tissue, producing epinephrine, and arising either in the adrenal medulla or in one of the many, widespread areas where chromaffin tissue is found during early life.

"If hypertension is due to circulating epinephrine, it will be abolished or significantly decreased by the intravenous administration of adrenolytic compounds. If the hypertension is due to any other cause, it will persist.

". . . in tolerable doses, the benzodioxanes . . . are adrenolytic only . . . ."

"The dosage finally selected approximated 0.25 mg. of 933F (piperidylmethyl benzodioxane) per kilogram for adults of average weight. . . .

"An impressive drop in blood pressure followed injection of benzodioxane when large amounts of circulating epinephrine were present. When removal of the tumor had abolished this excess of epinephrine, intravenous injection of these compounds no longer depressed the blood pressure." — Goldenberg, M., Snyder, C. H., and Aranow, Jr., H., **J. A. M. A.** 135:971, 1947.

CASTRATION FOR CANCER OF THE MALE BREAST

Favorable responses in carcinoma of the male breast following castration have been reported. Treves and associates have reported seven cases with a good response in 6. Strangely enough, in contrast to women, the men who showed the best results after castration were 63 years of age or older. A good response to orchiectomy has included partial regression of the primary tumor and osseous metastases. Treves believes that the effects of castration in carcinoma of the male breast may parallel the brilliant results obtained in carcinoma of the prostate following similar treatment.

Striking improvement in the local appearance in a case of cancer of the male breast twenty-two months after castration is shown by Nathanson. Farrow cites the case of a man in whom pronounced improvement in the primary tumor and increased density of skeletal metastases followed orchiectomy during a period of four months of postoperative observation.